

AMENDMENTS TO THE CLAIMS

1. (Previously presented) A flow through method for forming an embedded cell block, comprising:

automatically delivering a cell sample to a filter, at least a portion of the cell sample, that is otherwise physically unrestrained, being captured by the filter;

flowing a first reagent through the captured portion of the cell sample and the filter to dehydrate the cell sample;

flowing a second reagent through the captured portion of the cell sample and the filter to remove the first reagent; and

flowing an embedding solution through the captured portion of the cell sample and the filter urging the otherwise physically unrestrained portion of the cell sample toward the filter.

2. (Original) The method of claim 1, wherein the first reagent is alcohol.

3-5. Canceled

6. (Previously presented) The method of claim 1, wherein the embedding solution is liquefied paraffin.

7. (Previously presented) The method of claim 1, further comprising:
staining the cell sample prior to said flowing of an embedding solution.

8. (Previously presented) The method of claim 7, wherein said staining comprises flowing a staining solution through the captured portion of the cell sample and the filter.

9. Canceled

10. (Previously presented) The method of claim 1, further comprising:

flowing a preservative through the captured portion of the cell sample and the filter.

11. (Original) The method of claim 10, wherein the preservative is formalin.
12. (Previously presented) The method of claim 1, further comprising:
flowing a decalcifying solution through the captured portion of the cell sample and the filter .
- 13-14. Canceled
15. (Previously presented) The method of claim 1, wherein at least one of said flowing the first reagent, flowing the second reagent, or flowing the embedding solution, includes drawing the first reagent, the second reagent, or the embedding solution through the filter under a negative pressure.
16. (Previously presented) The method of claim 15, wherein said automatically delivering the cell sample includes automatically flowing the cell sample through a pipette.
17. (Previously presented) The method of claim 1, wherein said flowing the first reagent includes flowing the first reagent through a pipette.
18. (Previously presented) The method of claim 1, wherein said flowing the second reagent includes flowing the second reagent under a positive pressure.
- 19-25. Canceled
26. (Previously presented) The method of claim 1, further comprising:
solidifying the embedding solution to form an embedded cell block; and
separating the filter from the embedded cell block.

27. (Previously presented) The method of claim 26, further comprising:
re-melting at least a portion of a surface of the embedded cell block.
28. (Previously presented) The method of claim 27, further comprising:
cooling a surface of the embedded cell block to re-harden the surface.
29. (Previously presented) The method of claim 26, wherein a spacer is positioned adjacent the filter, and wherein separating the filter includes separating the spacer from the embedded cell block.
30. (Previously presented) The method of claim 1, further comprising:
heating the filter.
31. (Previously presented) The method of claim 1, further comprising:
cooling the filter.
32. (Previously presented) The method of claim 1, further comprising:
monitoring a level of at least one of the first reagent, the second reagent, or the embedding solution, relative to the captured cell sample.
33. (Previously presented) The method of claim 1, wherein said flowing the first reagent and said flowing the second reagent include keeping the cell sample immersed in at least one of the first and the second reagents.
34. (Previously presented) The method of claim 1, further comprising:
receiving the first reagent or the second reagent that has flowed through the filter in a waste container; and

comparing a weight of the first or second reagent received in the waste container to a weight of the first or second reagent that flowed through the captured cell sample.

35. (Previously presented) The method of claim 1, wherein at least one of said flowing a first reagent, a second reagent, or an embedding solution, involves a combination of positive and negative pressure.

36. (Previously presented) The method of claim 1, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.

37. (Previously presented) The method of claim 1, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that flowed through the filter.

38. (Previously presented) A method of forming an embedded cell block, comprising:
providing a cassette that includes a filter, the filter configured to capture at least a portion of a cell sample;
providing an automated system, the automated system including;
a support for the cassette;
automated delivery of a cell sample from a cell sample source;
automated delivery of a first reagent from a first reagent source;
automated delivery of a second reagent from a second reagent source; and
automated delivery of an embedding solution from an embedding solution source;
mounting the cassette to the support;
delivering automatically a cell sample to the filter, at least a portion of the cell sample that is otherwise physically unrestrained being captured by the filter;
delivering automatically a first reagent from the first reagent source to the captured portion of the cell sample and through the filter;

delivering automatically a second reagent from the second reagent source to the captured portion of the cell sample and through the filter; and

delivering automatically an embedding solution from the embedding solution source to the captured portion of the cell sample, urging the otherwise physically unrestrained portion of the cell sample toward the filter.

39. (Previously presented) The method of claim 38, wherein the automated system includes at least one pipette tip, and further wherein said delivering automatically the cell sample includes automatically delivering the cell sample through the at least one pipette tip to the filter.

40. (Previously presented) The method of claim 39, wherein said delivering automatically the first reagent includes delivering automatically the first reagent through a pipette tip and drawing the first reagent through the filter under a negative pressure.

41. (Previously presented) The method of claim 40, wherein said delivering automatically the second reagent includes delivering automatically the second reagent through a pipette tip and drawing the second reagent through the filter under a negative pressure.

42. (Previously presented) The method of claim 41, wherein said step of delivering automatically the embedding solution includes delivering automatically the embedding solution through a pipette tip and drawing the embedding solution through the filter under a negative pressure.

43. Canceled

44. (Previously presented) The method of claim 38, further comprising:
removing the filter from the cassette to expose a surface of the embedded cell block.

45. (Previously presented) The method of claim 44, further comprising:

re-melting at least a portion of the embedded cell block.

46. (Previously presented) The method of claim 38, further comprising:
heating the filter.
47. (Previously presented) The method of claim 46, further comprising:
cooling the filter.
48. (Previously presented) The method of claim 38, further comprising:
monitoring a level of the first reagent, the second reagent, and/or the embedding solution delivered to the cell sample.
49. (Previously presented) The method of claim 38, wherein said delivering automatically the first reagent and said delivering automatically the second reagent include delivering automatically the first and second reagents so that the cell sample remains immersed in at least one of the first and the second reagents.
50. (Previously presented) The method of claim 38, wherein the automated system includes a waste container that receives reagent that has passed through the filter, the method further comprising:
comparing a weight of reagent received in the waste container to a weight of reagent delivered to the cell sample.
51. (Previously presented) The method of claim 38, wherein at least one of said delivering automatically a first reagent, said delivering automatically a second reagent, and said delivering automatically an embedding solution, includes a combination of positive and negative pressure.

52. (Previously presented) The method of claim 38, further including the step of monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that has been delivered through the filter.

53. (Previously presented) A flow through method for forming an embedded cell block, comprising:

delivering a cell sample to a filter, the filter capturing at least a portion of the cell sample;

flowing a first reagent through the captured portion of the cell sample and the filter to dehydrate the cell sample;

flowing a second reagent through the captured portion of the cell sample and the filter to remove the first reagent;

flowing an embedding solution through the captured portion of the cell sample, at least a portion of the embedding solution flowing through the filter and a thermally conductive filter support adjacent to the filter; and

heating the embedding solution through a thermally conductive filter support adjacent to the filter to promote the flow of embedding solution through the filter.

54. Canceled

55. (Previously presented) The method of claim 53, further comprising:

cooling the embedding solution by removing heat through the thermally conductive filter support.

56. (Previously presented) The method of claim 53, further comprising:

cooling the embedding solution about the captured portion of the cell sample.

57. (Previously presented) The method of claim 53, wherein the first reagent is alcohol.

58. Canceled

59. Canceled

60. (Previously presented) The method of claim 53, wherein the embedding solution is liquefied paraffin.

61. (Previously presented) The method of claim 53, further comprising:
staining the captured portion of the cell sample prior to flowing the embedding solution.

62. (Previously presented) The method of claim 61, wherein staining comprises flowing a staining solution through the captured portion of the cell sample and the filter.

63. (Previously presented) The method of claim 53, further comprising:
flowing a preservative through the captured portion of the cell sample and the filter.

64. (Previously presented) The method of claim 63, wherein the preservative is formalin.

65. (Previously presented) The method of claim 53, further comprising:
flowing a decalcifying solution through the captured portion of the cell sample and the filter.

66. (Previously presented) The method of claim 53, wherein at least one of said flowing the first reagent, flowing the second reagent, or flowing the embedding solution, includes drawing the first reagent, the second reagent, or the embedding solution through the filter under a negative pressure.

67. (Previously presented) The method of claim 53, wherein said step of flowing the first reagent includes flowing the first reagent through a pipette.

68. (Previously presented) The method of claim 53, wherein said step of flowing the second reagent includes flowing the second reagent by application of a positive pressure.
69. (Previously presented) The method of claim 53, further comprising:
separating the filter from the embedded cell block to expose a surface of the embedded sell block.
70. (Previously presented) The method of claim 69, further comprising:
re-melting at least a portion of the surface.
71. (Previously presented) The method of claim 70, further comprising:
cooling a portion of the surface of the embedded cell block.
72. (Previously presented) The method of claim 69, wherein a spacer is positioned adjacent the filter, and wherein said separating the filter includes separating the spacer from the embedded cell block.
73. (Previously presented) The method of claim 53, further comprising:
monitoring a level of at least one of the first reagent, the second reagent, or the embedding solution, relative to the captured cell sample..
74. (Previously presented) The method of claim 53, wherein said flowing the first reagent and said flowing the second reagent include keeping the cell sample immersed in at least one of the first and the second reagents.
75. (Previously presented) The method of claim 53, further comprising:
receiving the first reagent or the second reagent that has flowed through the filter in a waste container; and

comparing a weight of the first or second reagent received in the waste container to a weight of the first or second reagent that flowed through the captured cell sample.

76. (Previously presented) The method of claim 53, wherein at least one of said flowing a first reagent, flowing a second reagent, or flowing an embedding solution, includes a combination of positive and negative pressure.

77. (Previously presented) The method of claim 53, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.

78. (Previously presented) The method of claim 53, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that flowed through the filter.

79. (Previously presented) A method of forming an embedded cell block, comprising:
providing a cassette that includes a filter and a thermally conductive filter support, the filter configured to capture at least a portion of a cell sample;
providing an automated system, the automated system including;
a support for the cassette;
automated delivery of a first reagent from a first reagent source;
automated delivery of a second reagent from a second reagent source; and
automated delivery of an embedding solution from an embedding solution source;
mounting the cassette to the support;
delivering a cell sample to the filter;
delivering automatically a first reagent from the first reagent source to the captured cell sample and through the filter;
delivering automatically a second reagent from the second reagent source to the captured cell sample and through the filter;

delivering automatically an embedding solution from the embedding solution source to the captured cell sample; and

heating the embedding solution through the thermally conductive filter support to promote the flow of embedding solution through the filter.

80. Canceled

81. (Currently amended) The method of claim [[80]] 79, further comprising:
cooling the embedding solution about the captured cell sample by removing heat through the thermally conductive filter support.

82. (Previously presented) The method of claim 81, wherein the automated system includes at least one pipette tip, and further wherein said delivering automatically the first reagent includes delivering automatically the first reagent through a pipette tip and drawing the first reagent through the filter under a negative pressure.

83. (Previously presented) The method of claim 82, wherein said delivering automatically the second reagent includes delivering automatically the second reagent through a pipette tip and drawing the second reagent through the filter under a negative pressure.

84. (Previously presented) The method of claim 83, wherein said delivering automatically the embedding solution includes delivering automatically the embedding solution through a pipette tip and drawing the embedding solution through the filter under a negative pressure.

85. Canceled

86. (Previously presented) The method of claim 79, further comprising:
removing the filter from the cassette to expose a surface of the embedded cell block.

87. (Previously presented) The method of claim 86, further comprising:
re-melting at least a portion of the embedded cell block.
88. (Previously presented) The method of claim 79, wherein said delivering automatically the first reagent and said delivering automatically the second reagent include delivering automatically the first and second reagents so that the cell sample remains immersed in at least one of the first and the second reagents.
89. (Previously presented) The method of claim 79, wherein the automated system includes a waste container that receives reagent that has passed through the filter, the method further comprising:
comparing a weight of reagent received in the waste container to a weight of reagent delivered to the cell sample.
90. (Previously presented) The method of claim 79, wherein at least one of said delivering automatically a first reagent, delivering automatically a second reagent, or delivering automatically an embedding solution involves a combination of positive and negative pressure.
91. (Previously presented) The method of claim 79, further including monitoring the flow rate of the first reagent, the second reagent and/or the embedding solution.
92. (Previously presented) The method of claim 79, further including monitoring the refractive index of the first reagent, the second reagent and/or the embedding solution that has been delivered through the filter
93. (Previously presented) The method of claim 79, wherein said delivering the cell sample comprises delivering automatically the cell sample to the filter.

94. (Previously presented) The method of claim 53, wherein said delivering the cell sample to the filter comprises automatically delivering the cell sample to the filter.